

REMARKS

Upon entry of the present amendment, the claims in the application the claims in the application are claims 1-17, of which claims 1, 4 and 5 are independent.

Claims 4 and 5 are rewritten in independent form including all of the limitations of claims from which they formerly depended. New claims 14-17 are added which define additional aspects of the mobile repeater stations and communications between the various components of the invention.

Applicant respectfully submits that the amendments are fully supported by the original disclosure, including the drawings and the discussion bridging pages 6-7 of the specification. Applicant also respectfully submits that no new matter is introduced by way of the amendments.

Still further, applicant gratefully acknowledges the Examiner's indication at items 1-2 of the Office Action that claims 4-5 contain allowable subject matter, and in light of the above amendment to these claims, they are now believed to be allowable.

Art-Based Rejection Under 35 USC 102

1. In item 4 of the Office Action, the Examiner has rejected claims 1-3, 6-7 and 12-13 under 35 USC 102(b) as being anticipated by Itoh et al. (US 5,490,284). It is the Examiner's position that Itoh's satellite/land mobile communication system includes all features of the rejected claims, with particular reference to Itoh's Figs 1, 5, 6 and the discussion at his col. 1, lines 9-39, col. 2, lines 12-29, col. 5, lines 8-48.

Applicant's Response

Upon carefully consideration applicant respectfully such rejection, and submits that each of the rejected claims is clearly patentably distinct over Itoh, because Itoh's land mobile/satellite communication system does not include several features of the claimed invention, and otherwise addresses significantly different problems and objects than those of present invention.

For example, some objects of the present invention are to improve signal to noise ratio in communication links between portable communication terminals and low earth communication satellite stations for improved quality and reliability, to reduce the size of the low earth communication satellite station, and to reduce power consumption in the low earth communication

satellite station and the portable terminals. In relation thereto, claim 1 defines a system comprising a plurality of portable communication terminals communicating with each other through a communication link formed between the portable terminals and including at least one communication satellite station, and a plurality of mobile repeater stations mounted on mobiles located on the earth to repeat communications in the communication link.

Quite differently, a focus of Itoh's system is to provide a transportable earth station 4 capable of communicating with both a mobile satellite communication system and a terrestrial based mobile communication system, a (singular) portable terminal 5 which is capable of radio communication with the transportable earth station and is also used in the terrestrial based mobile communication system, such that the portable terminal can be used in a wide variety of communication environments. Further, according to an important aspect of Itoh's system, the interface used for communication between the portable terminal and the transportable earth station is identical to the radio interface of the terrestrial based mobile communication system, although the communications between the portable terminal and the transportable earth station involve very weak radio signals (that are appropriately amplified or reduced in strength by the transportable earth station for communication with other components of the system) so that the very weak signals do not require compliance with strict broadcasting regulations.

Additionally, Itoh discusses that his transportable earth station 4 is used to make it possible to communicate with the communication satellite 1 without any obstacle placed between them, e.g., such as described at Itoh's page 4, lines 33-34 and page 5, lines 28-29, "the portable earth station is placed at the position where it is visible from the satellite 1." In other words, Itoh's is such that it may be selectively placed in a location where communications between it and a base station 3 are possible ("for example, by any window of a room where communications with the base station 3 are possible") or at a location where it is visible from a communications satellite 1, depending on which communication system is to be communicated with; while given the "very weak radio waves" used to communicate between the portable terminal 5 and the transportable earth station 4, these components must be placed in *relatively close proximity* for Itoh's system to work.

Thus, applicant respectfully submits that Itoh fails to teach several features of claim 1, including : a plurality of portable communication terminals; a plurality of mobile repeater stations;

a communication link between the portable terminals; and mobile repeater stations which are mounted on mobiles mounted on the earth.

In this regard, applicant notes the Examiner's asserted position that Itoh's system inherently utilizes a plurality of portable communication terminals and a plurality of mobile repeater stations, with a communication link between the portable terminals including his communications satellite 1, because the system involves communication anywhere in the world. Applicant respectfully submits, however, that such assertion is not supported by Itoh's disclosure, however, as understood from the focus and features of Itoh's system discussed above. Again, there is no disclosure of multiple portable terminals with a communication link therebetween because Itoh's concern is communications between the single portable terminal 1 (on the one hand) and both the mobile satellite and terrestrial based communication systems (on the other hand). Further, Itoh's transportable earth station 4 is never indicated to be mounted on a mobile located on the earth, but instead is itself indicated to be portable such that it can be placed in a window or the like near the portable terminal 5.

Still further, applicant respectfully submits that Itoh's system does not disclose or suggest features of the dependent claims, including: a plurality of communication satellite stations, etc. as defined in claim 2; a mobile repeater station with means for communicating with the satellite by a carrier wave of higher frequency than that used for communicating with the portable terminal as defined in claims 3 and 13 (noting that Itoh only discusses different frequencies, not the relative strength of same); means for converting at least one of frequency and modulation for communication by changing software ... as defined in claim 7 (noting that Itoh uses frequency converters 20, 30, 67 and a changeover switch 29 for such purpose); a responding means as defined in claim 12 (noting that Itoh's transportable earth station 4 automatically functions as a repeater for signals from/to the (single) portable terminal 5 without any need for request).

In this regard, it is noted that the Examiner is required to interpret "means-plus-function" limitations of the claims "as limited to the corresponding structure, materials or acts described in the specification and equivalents thereof", pursuant to MPEP 2181, whereas the disclosed means are not same as, or equivalent to, the corresponding structure, materials or acts disclosed by Itoh.

Again, applicant has considered the Examiner's references to various portions of Itoh's

disclosure as corresponding to the several claimed features, but it is respectfully submitted that Itoh's disclosed features do not actually correspond to the claimed features as discussed above.

Based on the foregoing, it is respectfully submitted that the rejection of claims 1-3, 6, 7, 12 and 13 under 35 USC 102(b) based on the Itoh reference is overcome, and accordingly it is respectfully requested that such rejection be reconsidered and withdrawn.

Art-Based Rejections Under 35 USC 103(a)

2. In item 6 of the Office Action, the Examiner rejects Claims 8-11 under 35 USC 103(a) as unpatentable Itoh in view of Macridis (US Pub. 20030032429). It is the Examiner's position that it would have been obvious to persons skilled in the art at the time of the invention to provide Itoh's system with a means for functioning as a Peering points or Proxies (to provide accessibility to conventional land mobile telephone systems or Internet) based on teachings of Macridis; and that it would otherwise be obvious that a satellite station could be used to store data and function as a server, and that communication satellite stations and mobile repeater stations include means for transmitting information about their locations and for aiming an antenna beam thereof as claimed.

Applicant's Response

Upon carefully consideration applicant respectfully traverses such rejection, and submits that each of claims 8-11 is clearly patentably distinct over the Itoh and Macridis references, based on the foregoing arguments regarding the deficiencies of Itoh's system relative to the invention of claims 1-3 (which are not overcome by any additional teaching of Macridis), and because the references otherwise do not teach or suggest the additional features set forth in claims 8-11, but actually teach away therefrom.

For example, in relation to claims 8-9, the Examiner alleges that the claimed features are well known, but clearly the features are not well known and there is no evidence supporting the Examiner's allegation. As discussed in the present specification, applicant's mobile repeater stations according to the invention are "newly introduced", whereas given the means-plus-function nature of the claimed features, again, the Examiner must interpret the features to include the

embodiment(s) disclosed in the specification and equivalents thereof. Neither Itoh or Macridis teaches any feature corresponding to the satellite position information transmitting means and the repeater station antenna beam aiming means as claimed and disclosed. Rather, Itoh indicates that his transportable earth station is merely placed in a window or the like where communications with the base station 3 are possible" or at a location where it is visible from the communications satellite 1. This is contrary to the claimed features, and hence teaches away from same.

Further, in the claim 11 rejection, the Examiner cites Itoh, (col. 5, lincs 39-43) as allegedly teaching data storage and server usage relative to his transportable earth station 4. However, applicant respectfully submits that review of the cited section provides no evidence of such attributes. In the referenced section, Itoh does not mention data, and merely teaches the relay of signals between components, which does not provide for the storage of signal data.

Based on the foregoing, it is respectfully submitted that the rejection of claims 8-11 under 35 USC 103(a) based on Itoh and Macridis is overcome, and accordingly it is respectfully requested that such rejection be reconsidered and withdrawn.

Other Matters

The additional references cited by the Examiner at item 7 of the Office Action, Hatano, Karabinis and Fukutomi, have been considered by applicant. It is respectfully submitted, however, that these additional references fail to overcome the deficiencies of the Itoh and Macridis references as discussed above in relation to the present claims.

New claims 14-17 are believed to be allowable over the references of record based on the foregoing arguments concerning the merits of independent claim 1 from which they depend, and on the merits of the additional features set forth in these new claims.

Conclusion

In conclusion, applicant has overcome the Examiner's rejections as presented in the Office Action; and moreover, applicant has considered all of the references of record, and it is

respectfully submitted that the invention as defined by each of the present claims is clearly patentably distinct thereover.

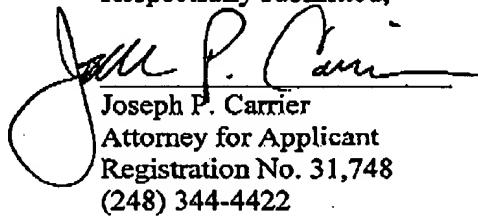
The application is now believed to be in condition for allowance, and a notice to this effect is earnestly solicited.

If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that she telephonically contact applicant's undersigned representative to expeditiously resolve prosecution of the application.

Favorable consideration is respectfully requested.

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being sent via facsimile transmission to the US Patent & Trademark Office, Art Unit 2684, at (703) 872-9314 on January 20, 2004.

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